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## Study and practice of pharmacy open experimental teaching mode

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### ABSTRACT

In order to improve the quality of pharmacy personnel training, we continue to explore reforms, innovative teaching ideas, and establish the pharmacy open experimental teaching mode. The model is divided into three levels stepped from amateur type, course type to graduate design type, make up for the shortcomings of traditional experimental teaching mode, and innovate the experimental teaching methods to improve the quality of personnel training. On this basis, our in-depth practice, forming a rich own characteristics, widely recognized community school style, has achieved remarkable results.

### KEYWORDS

Pharmacy; Open experiment research; Traditional experimental teaching model; Self-designed experiment; Self-selected topic.



## INTRODUCTION

Currently, open experimental teaching model has become a hot research topic in the field of teaching<sup>[1]</sup>. Open Experimental Teaching does not only open time and space, but also open to the entire teaching system, is compatibility and extension of different educational theories<sup>[2]</sup>. As a comprehensive university pharmacy, build and practice pharmacy open experimental teaching mode; enhance students' practical ability, which will have great practical significance to comprehensively improve the quality of personnel training in pharmacy<sup>[3]</sup>.

## RESULT AND DISSCUSS

### **The necessity of establish the open experimental teaching mode in pharmacy**

The traditional experimental teaching model is the implementation of closed-end management; students conduct stipulated experiments within stipulated time, and there is no space for the students' initiative. Students are often in groups, not everyone can begin to operate, there is a lack of training on the ability, which leads to the flaw of forming students' professional capabilities, and finally can not meet the demand for pharmacy personnel. At the same time, the ability of teachers college and experimental facilities has not been well played. Basically, the employment destination of pharmacy undergraduate students is pharmaceutical companies, where will need more front-line strong professional skills students. Taking into account the ability of the community on the pharmacy personnel requirements, as a profession local college of pharmacy, we find it necessary that establish the pharmacy open experimental teaching mode to improve students' proficiency. Therefore, we should to establish a pharmacy open experimental teaching mode.

### **Establish research pharmacy open experimental teaching mode**

Currently, personnel's training in the whole world is diverse. In this context, we also propose to establish a diversified Pharmacy Training Mode. Therefore, Research pharmacy open experimental teaching mode is the deep connotation of pharmacy diverse talent training mode, Which mainly train the ability of students to improve the quality of personnel training.

We designed the study into three levels:

1. The main content of the first level is an open experiment conducted by students in their spare time. Use college time from Monday to Friday 5:00: 00-9: 00 and weekends according to their own interests and hobbies experimental study.

Divide into three steps, two links:

Collection, research open experimental subject. Title Source is divided into three, one derived from the original topic of interest to the students themselves; Second, from all kinds of science and technology competitions, undergraduate instructors' research projects; third expansion and improvement comes from the curricular teaching. Open experimental subject requirements reflect the characteristics of Pharmacy, especially in line with my school Pharmacy and school running conditions. The Subject will be finally decided by the Commission on College Teaching. And organize and sort by hand, and gradually establish excellent title library, the formation of long-term training mechanism.

Study design Open experiments. Undergraduate student under the guidance of mentors, and after a selected topic, through access to information and literature, analysis of the discussion, the development of specific experimental methods, experimental procedures, experimental content, the expected results, the use of equipment and medicines. The experimental design reviewed by undergraduate tutor.

Students independently open experiment. When students do the open experiment independently, to give full play to the initiative of students, teachers do not make recommendations throughout the guide, try not to enter the laboratory, but students have the appropriate guidance when they have questions or encounter difficulties, mainly to encourage students to think independently problems and improve the ability to solve problems.

## Open acceptance test

### Divided into two areas

1. The first is an undergraduate mentor for guidance and acceptance, followed by graduate student guidance and acceptance.

2. The second level is mainly carried out in the course of open experimental teaching. We selected pharmacy main course "Pharmaceutical Analysis", "Pharmacy" and other courses early practice, and gradually extended to all the main courses. Its model is to choose a content of a course to conduct open-ended experiments, and then extended to the part, conditional and gradually extended to the entire contents of a full course. Note that some of the pharmacy experiments have Greater toxicity, such experiments carried out temporarily.

Divided into three steps:

1. Design the best experimental subject.

In accordance with the requirements of the different experimental curriculum, course content, etc. The purpose of the requirements under the guidance of teachers, access to documents and data were analyzed, independent design optimal experimental subject.

2. Group discussions, self-designed experiments.

Promote team spirit, team (4-6 people) in the form of research and discussion experimental design line, experimental methods and procedures, laboratory supplies and equipment, the division of labor and other personnel to analyze the feasibility, eventually forming the experimental program.

3. in small groups to complete the open experiment. During the experimental procedure, emphasize students 'independent spirit and teamwork, in the abilities of students, strengthen the cultivation of students' scientific spirit.

4. Open Experiment acceptance.

Divide into one step: Subject teachers to monitor the entire process of acceptance.

3. The third level is primarily aimed at the graduation design and thesis defense process, encourage students to open experiment. Its mode is selected by the graduate students' autonomous design, after graduation in design instructor approved, independent graduate design, writing thesis, and published articles, patented, and so on.

1. Self-selected topics.

Integrated design topics under the four-year university pharmacy professional knowledge set, the title is determined by the audit graduate design instructor.

2. Self-designed experiments.

After determining the subject, independent research and graduate design program, trying to highlight the simple, innovative and efficient, and the graduate design instructor checks.

3. Autonomous graduation practice.

Students can choose in schools, pharmaceutical companies, research institutes, etc., needed medicines and equipment provided by the school, pharmaceutical companies, research institutes, etc., to stay in contact and communication with tutors during graduation practice graduation design, so that it's easy to mentor.

4. Open Experiment acceptance.

Conduct graduating reply.

### Establish the evaluation system of pharmacy open experimental teaching mode

Combine pharmacy open experimental teaching mode characteristics, amateur sex, sex curriculum, graduation design in nature, the result is very important. But it can not be easily evaluated through the results of the conclusion, but has to take the following points into account: evaluate whether its experimental program designed to highlight the novelty, originality; evaluate whether the experiment

reflects its independence, whether students' cognitive ability get to play; evaluate whether the progress of the experiment is economic, simple, reflecting the most scientific, desired effect; evaluate whether their results has formed the report or the paper form, its value reflection. Only considering these factors, the evaluation of pharmacy open experimental teaching mode has its science and objectivity<sup>[4]</sup>.

### **Pharmacy Practice Open Experimental Teaching Mode.**

To carry out pharmacy open experimental teaching, we carried out in the undergraduate tutorial system in the early; each student can chose their favorite teacher according to their interests and hobbies. Complete the laboratory and laboratory. Since 2008, we have gradually start from the college students to innovative experimental projects, conduct after-school type of pharmacy open experimental teaching mode which have achieved gratifying results and accumulated valuable experience. Begin with the curriculum content type of pharmacy open experimental teaching model from 2013, selected the "Pharmaceutical Analysis" and "pharmacy comprehensive experimental study", which has implemented two rounds and further deepened. From 2014, we conduct the pharmacy open experimental teaching mode in undergraduate graduation design, in this year, there are two students who had chosen this form and passed the respondent graduation. With these three forms, we not only train the students' practical ability to improve the quality of personnel training, and some of the students has also published a paper, to declare the patents, and even involved in the study of provincial scientific research, this is a overall harvest of the personnel training<sup>[5]</sup>.

## **CONCLUSIONS**

In order to better adapt to the talent competition in the pharmaceutical market and social requirements for pharmacy personnel quality. In recent years, College of Pharmacy, has been constantly exploring experimental teaching mode, continuous reform, innovative teaching ideas; in the curriculum, classroom teaching and practical teaching made a series of experiments to deepen the advancing reform. This time we have established pharmacy open experimental teaching mode to make up for the shortcomings of traditional experimental teaching mode, innovated the experimental teaching methods to improve the students' professional capacity, which formed a rich own characteristics, widely recognized community school style.

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